The Iterative Game Design Process in Detail
Introduction to Game Design LiveLessons
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In order to make the best games we can, we use the iterative design process. This is a cyclical approach in which you *conceptualize*, *prototype*, *playtest* and *evaluate* the design of your game. This cycle is continued until you and your team are happy with the design of your game. In some cases, this may only take five or six loops. In other cases, it may take 20 or more loops—every game is different.

Here is a brief description of the four steps in the iterative game design cycle:

Conceptualize
The first set in the iterative game design loop is Conceptualize. During the early stages of the process, this is where you and your team come up with the ideas for your game, including the design values for your game (see "Design Values Checklist" document for more). Sometimes this involves brainstorming (see "The Brainstorming Process" document), and sometimes it involves coming up with solutions for strengthening and fixing your game.

Prototype
Once you have your design values for your game, you are ready to make a prototype. This should be created as quickly and easily as possible. Prototypes serve one purpose: giving tangible form to your ideas. The important thing with early prototypes is getting to a playtest as soon as possible so that you can see if there is something to your ideas. Prototypes come in many forms, and will vary based on where you are in your design process. See "Types of Prototypes" below in this document.

Playtest
With your prototype internally tested and ready to do, the next step is playtesting. This is where you get to see what players think about your game, and whether or not you are meeting your goals established in your design values. Playtests should evaluate the ideas you've given form to in your prototypes. So pay close attention to your player's responses—both what they say but also what they do, even their facial expressions. See "Playtest Report" document for a sample form for collecting data from your playtest, and the "Playtest and Evaluation" section in this document.

Evaluate
The last step in the process is evaluating the results of your playtest. Did the playtest confirm or refute your expectations and ideas? What went well? What went poorly? What should you do next? Evaluation allows you to reflect on the design of your game, and consider how to make it better. It also sets you up for starting the cycle over with the next phase of conceptualizing new solutions and ways to make your team's game better.

Types of Prototypes
There are many different kinds of prototypes; which kind you should make depends on what kinds of ideas you are testing. The main kinds of prototypes are Paper, Physical, Playable, Art, Code/Tech, Core Game and Complete Game.

Paper
Paper prototypes help make the early ideas of a game concept tangible in quick, easy-to-make ways. Paper prototypes can take many forms, but they are helpful for taking stock of the environment, objects and actions of your game, particularly if you are making a screen-based game for a console, a smartphone or PCs. In our Ping! paper prototype, we used the “noun, verb, adjective” exercise to help us think through all the elements of the game, which we then turned into small paper cut-outs.

Physical
Physical prototypes help you experience what your game might feel like to play. With Ping!, we focused on what different materials felt like to play with using different kinds of paddles and balls, and what happens when you remove the net.

Playable Prototypes
Playable prototypes are the earliest prototypes that allow you to experience the core actions of the game. These should focus on the most important actions players will perform when playing your game so that you can make sure it is fun to do. With Ping!, this involved making a basic version of the game in which we could easily adjust parameters relating to the speed of the ball and the size of the paddles.

Art
Art prototypes are great for getting feedback on the visual and sound design of your project. Mock up screens and show them to people for feedback. For Ping!, we did some early art tests around color palette inside Processing. We also did some basic mock-ups that had more elaborate visual elements.

Code/Tech
Code and tech prototypes are experiments in implementation of your game. Sometimes they are used to determine how to build a feature in your game, or maybe to test frame rates for a particular kind of animation. In Ping!, we did basic code tests around collision detection and the paddles using Processing.

Core Game
Core game prototypes include the full play experience—all player actions are in place and the level design is implemented for important levels. The core game prototype is the first time you are really evaluating to breadth of your game.

Complete Game
Complete game prototypes include all aspects of the game—all player actions, all levels, even things like menus and option selection screens. This is the evaluation of the entire game, and all aspects of the play experience.

Types of Playtests
As you move through the design of your game, you will run a variety of different playtests. The main kinds of playtesting are Internal, Game Developer, Friend, Target Audience, New Player, and Experienced Player playtests.

Internal Playtests
Internal playtests are those conducted within your team. Internal playtests happen in many different ways: a single team member checking their work; a portion of the team playing or watching a team member play to get feedback; a full team playtest to review and give feedback on the current state of the game or a portion of the game.

Game Developer Playtests
Game developer playtests are those you conduct with fellow game developers. Other game developers are used to playing in-progress games, and so are able to see past the rough nature of prototypes. Game developer playtests are great ways to get early feedback on playable prototypes, art prototypes, code/tech prototypes and core game prototypes.

Friend Playtests
Friend playtests are those you conduct with friends and family. They are likely to be less familiar with the game design process, and so will not be as helpful to test early prototypes. However, they will be useful for helping you see how average players will respond to and play your game.

Target Audience Playtests
Target audience playtests are those you conduct with people from your intended audience. The sooner you can get your game in front of players from your target audience, the sooner you will be able to gauge whether or not you are providing the play experience you hoped.

New Player Playtests
New player playtests are useful once you get to the core game and complete game prototyping phase. New players will help you see how approachable your game is, and how easy it is to learn how to play.

Experienced Player Playtests
Experienced player playtests help you see what happens when players play your game over longer periods of time. Experienced players will help you see emergent strategies, how long the game remains fun, and many other aspects of your game.

Playtesting and Evaluation

The playtesting and evaluation process hinges on the collection of data from your playtesters. This will help you determine the strengths and weaknesses of your game's design. The main things to watch for and evaluate are: Gameplay, Visual/Audio, Bugs, Tester Comments, Observations and Ideas.

Gameplay

What do you see players doing while playing your game prototype? Are they understanding how to play? Are they using the designed actions in the ways you imagined? Are they able to achieve the goals you've designed for them?

Visual/Audio

How are players responding to the look and sound of your prototype? Do they understand them? Are they receiving the necessary feedback? Are things communicating the information your team intended?

Bugs

Are there any notable bugs? Are there things keeping players from having the play experience your team designed? Note bugs can just as easily appear in paper and physical prototypes as in digital prototypes.

Tester Comments

What are your players saying? Whenever possible, ask your players to speak their thoughts aloud as they are playing. This will help you understand what they are doing, and why.

Observations

In addition to what your players are saying, pay close attention to what they are doing. Are they smiling? Laughing? Frowning? Struggling with the controls?

Ideas

As you observe your players, ideas about how to improve your team's game will likely come to you. Capture these as well. They will be useful in the next conceptualize phase.